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USSR Report

ENERGY

No. 42

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CONTENTS

ELECTRIC POWER

Progress on Cheboksarskaya GES Discussed
(Yu. Knyazev; PRAVDA, 5 Nov 80).............................. 1

FUELS

Gas-Industry Enterprise Best Described by its 'Passport'
(GAZOVAYA PROMYSHLENNOST', Sep 80)............................ 3

Standards Base for Gas Industry Being Developed
(GAZOVAYA PROMYSHLENNOST', Sep 80)............................ 7

FRG-USSR Cooperation on Crane Ship
(A. Gol'denberg; VYSHKA, 16 Aug 80)........................... 14

Scientific Research for Kuznetsk Basin Coal Mining Is Fragmented
(Ya. Frayman, V. Bedin; SOTSIALISTICHESKAYA INDUSTRIYA, 20 Sep 80)... 16

Different Exploitation Techniques Needed for Special Conditions
(K.B.Ashirov; NEFTYANOYE KHOZYAYSTVO, Oct 80)................. 18

Need To Organize Mining Science Work in Kuznets Basin Cited
(Ya. Frayman, V. Bedin; SOTSIALISTICHESKAYA INDUSTRIYA, 20 Sep 80)... 24

Bashkir Oil Production Assessed
(I. Payvin; SOTSIALISTICHESKAYA INDUSTRIYA, 5 Oct 80)........ 26

Pareks Oil Refinery
(TRUD, 1 Oct 80)... 28

[III - USSR - 37]

Oilfield Performance Found Wanting in Turkmenistan
(G. Vasil'yeva; TURKMENSKAYA ISKRA, 31 Oct 80)................ 29

Fix To Prevent Pump-Station Turbine Bearing Failure Devised
(M.A. Tyapkin; GAZOVAYA PROMYSHLENNOST', Sep 80)............. 31

Rotating Frequency of Pump-Station Turbine Stabilized Automatically
(Ye.I. Chubenko et al; GAZOVAYA PROMYSHLENNOST', Sep 80)..... 32

Lack of Blowout Preventers and Introduction of New Drill Bits Discussed
(Ye. Reshetnikov; SOTSIALISTICHESKAYA INDUSTRIYA, 30 Sep 80). 33

Importance of Gas Pipeline Protection Reemphasized
(V.I. Eristov, V.I. Trushkin; GAZOVAYA PROMYSHLENNOST', Sep 80).. 35

Caspian Plant To Build Deepwater Offshore Drilling Platforms
(Yu. Aliyev; BAKINSKIY RABOCHIY, 4 Oct 80)................... 38

Tractor Fuel-Equipment Repair, Fuel Storage Faulty at Sovkhozes
(Yu.Sviridov; LENINGRADSKAYA PRAVDA, 18 Oct 80).............. 41

Coal Mining by Huge Walking Excavator at Nazarovo Described
(S. Chetverikov; SOTSIALISTICHESKAYA INDUSTRIYA, 24 Sep 80).. 45

Briefs

Ivanovo Powerplant Reconstruction 47
Perm' Powerstation Reconstruction 47
Ural-Volga Oilfield Work 47
Kuban' River Pipeline Crossing 48
Navoi Power Station 48
Perm' Power Unit 48
Downhole Equipment 48
Sayano-Shushenskaya GES Readiness 48
New Leningrad-Produced Generator 49
New Pumped-Storage Plant 49

ELECTRIC POWER

PROGRESS ON CHEBOKSARSKAYA GES DISCUSSED

Moscow PRAVDA in Russian 5 Nov 80 p 1

[Article by Yu. Knyazev, freelance correspondent for PRAVDA, Cheboksary: "Submit, Volga!"]

[Text] A Report from the Cheboksarskaya GES Project

On 4 November, a peaceful explosion resounded over the Volga in the area of the Cheboksarskiy hydraulic power system project, the final stage of the Volga power cascade. The cofferdam was exploded and the Volga waters rushed into the basin, washing the snow-white concrete walls of the lower approach canal levy. The crews of the powerful floating hydraulic dredges got down to business without delay, washing away the dirt from the dam in other sectors. Already there is the smooth, level surface of water alongside the power house building, alongside the overflow dam, and only a narrow strip of water separates the dam from the left bank of the Volga...

Flooding the basin is an important stage in the work at the Cheboksarskiy hydraulic power network. It is a construction of friendship. Many cities and villages of the Chuvashskaya ASSR, Mariyskaya ASSR and Gor'kovskaya Oblast are situated on the banks of the Cheboksarskoye Sea which spreads a distance of more than 300 kilometers. Envoys from Mariyskiy Kray and residents of Gor'kiy were present at the ceremonial meeting devoted to flooding the basin and the forthcoming conquest of the river, together with thousands of hydraulic engineers and representatives of various labor collectives of Chuvashiya.

Today the last preparations for the decisive assault are being concluded in the place where the closure will be made. There is now very little time left until this event. In recent weeks the hydraulic engineers have gradually narrowed the river channel. Today the width of the passage is only about 150 metres. It is as if two stone ridges are rushing to meet each other. And how swift the flow of the great Russian river has become! The water velocity has doubled. The last boats of the 1980 navigation season have just passed through here. In the spring of next year, the Volga steamers will pass through a new channel in this region, heading for the locks.

At the bridgehead for the offensive, they are transporting multi-ton blocks of concrete which will lie on the river bottom, obstructing the water's path. The floating hydraulic dredges come out to their starting positions. They are faced with washing away a channel dam in a short period of time, the width of which reaches 400 metres at the base.

It is characteristic that for the first time on the Volga the hydraulic engineers are employing a pioneering closure method in conquering the river. It does not require erection of a pontoon bridge for placing the blocks of stone and concrete. The attack will be conducted from two bridgeheads located opposite each other. Steadfastly, metre by metre, the two stone ridges will come together, narrowing the passage.

"At our bridgeheads we have concentrated 5,000 blocks of concrete, each weighing 10-12 tons," said the head of the closure group, a participant in several large-scale hydraulic engineering structures, V. Kanin. "Many oversized trucks, powerful excavators, bulldozers and cranes will participate in the conquest."

The hydraulic engineers are working at top speed these days. Assembly of the runner for the first turbine has been completed at the installation site. Assembly of the rotor and the guiding apparatus for the first hydraulic turbogenerator unit is underway.

Seven electric power stations are already in operation on the Volga. Work on the eighth Volga GES has now entered the final stage.

9194
CSO: 1822

FUELS

GAS-INDUSTRY ENTERPRISE BEST DESCRIBED BY ITS 'PASSPORT'

Moscow GAZOVAYA PROMYSHLENNOST' in Russian No 9, Sep 80 pp 2-3

[Article: "The Enterprise Passport Is the Basis for Feasible Planning"]

[Text] The CPSU Central Committee and USSR Council of Ministers Decree No 695, dated 12 July 1979, "On the Improvement of Planning and Strengthening of the Influence of the Economic Mechanism on Increasing Production Efficiency and Work Quality," calls for a new and important step in improvement of the system for planned guidance of the economy, and it aims at further raising social production effectiveness, accelerating scientific and technical progress and growth in labor productivity, and improving output quality. The decree attributes great importance to a strengthening of the role of the state five-year plan and to the careful development of five-year and current plans on the basis of economic and engineering calculations.

One of the basic documents that should become the basis for planning production volume and technical and economic indicators is the passport of the production association (or enterprise). On the basis of standard passports that have been created by the USSR State Committee for Science and Technology, USSR Gosplan, USSR TsSU [Central Statistical Administration], Gosstandart [State Committee for Standards] and USSR Gosstroy, Mingazprom [Ministry of Gas Industry] has worked out passports for gas-producing and gas-treatment enterprises, associations that transport and supply gas, and drilling administrations, taking the industry's peculiarities into account. Standard passport forms have been used for machinebuilding enterprises.

The enterprise's passport is a single document that reflects an enterprise's structure and use of productive capacity, rhythmicity of production, quality of output produced, effectiveness of the use of fixed capital and reduction in the consumption norms for supply and equipment resources, as well as fulfillment of the plan with respect to the main technical and economic indicators for the reporting year. In analyzing all these indicators, workers of associations and enterprises should discover unused reserves with a view to considering them when making up plans for a future period.

Despite the universality of the subdivisions and indicators of enterprise passports of the various subbranches of the industry, each has its peculiarities. All industrial enterprises and gas-transporting organizations have formulated and sent a passport to their superior organizations on data for the reporting year of 1979.

Various All-Union industrial associations, such as Kaspmorneftegazprom [Caspian Offshore Oil and Gas Industry Association], Ukrgazprom [Ukrainian Gas Industry Association], Soyuzgazmashapparat [All-Union Association for Gas-Industry Machinery and Equipment] Soyuzgazmashremont [All-Union Association for the Repair of Gas-Industry Machinery], Sakhalinmorneftegazprom [Sakhalin Offshore Oil and Gas Industry Association] and Soyuzpromgaz, submit to the ministry consolidated passports for the association as a whole, together with passports for subordinate enterprises. Among the first that have finished work on making up passports are Kaspmorneftegazprom, Soyuzgazenergoremont [All-Union Association for the Repair of Gas-Industry Power Systems], Turkmengazprom [State Association of the Turkmen Gas Industry], Kuban'morneftegazprom [Kuban' Offshore Oil and Gas Industry Association], Orenburggazprom [State Association of the Orenburg Gas Industry], Uraltransgaz [Ural Association for the Transport and Supply of Gas], Lentransgaz [Leningrad Association for the Transport and Supply of Gas], Gruztransgaz [Georgian Association for the Transport and Supply of Gas], Armyantransgaz [Armenian Association for the Transport and Supply of Gas] and others.

In order to show graphically the content of an enterprise passport, let us take a look at its various subdivisions and indicators in the examples of the gas-recovery production association Nadymgazprom [State Association for the Nadym Gas Industry] and the production association for transporting and supplying gas Tyumentransgaz [Tyumen' Association for the Transport and Supply of Gas], which make up the All-Union industrial association Tyumengazprom [State Association of the Tyumen' Gas Industry].

The status of Nadymgazprom gas reserves (in billions of m^3) at the end of the reporting year of 1979 are described by the data in table 1.

Table 1

Field	Initial gas reserves	Gas recovered since start of development, including the reporting year	Gas recovery in 1979	Remaining gas reserves	Current gas recovery factor
Medvezh'ye........	1,548.13	305.05	70.41	1,243.08	19.7
Tazovskoye........	90.16	0.15	0.03	90.01	0.17
Vostochno-Tarko-Salinskoye......	194.96	0.05	0.03	194.91	0.03
For the association as a whole.	1,833.25	305.25	70.46	1,528.0	17.07

The greatest amount of gas reserves (87.2 percent) belongs to the Medvezh'ye field, which produces 99.9 percent of all the association's gas.

If we open up still another page of the passport, we see that gas is being recovered relatively uniformly, without sharp fluctuations by quarter.

The distribution of gas recovery in 1979 by quarter was, in percents: 1st--25.3, 2d--24.6, 3d--23.5 and 4th--26.6. The quality of the gas recovered, as the passport demonstrates, corresponds completely to the industry's standards indicators: dew-point temperature at a pressure of 55 kg-force/cm^2 is -25 degrees C during the winter and -15 degrees C during the summer, mechanical impurities per 100 m^3 do not exceed 0.1 gram, hydrogen-sulfide content is not more than 2.0 grams per 100 m^3, and oxygen content is no more than 1.0 percent by volume.

The passport presents data about how many active wells there are in Nadymgazprom, what their average daily flow is, and how many observation wells there are. The active well-inventory utilization factor during 1979 was 0.987, while the planned factor was 0.944. The passport permits it to be seen that, aside from gas recovery, which is more than 95 percent of all the realized output, Nadymgazprom extends services to outside organizations, supplying thermal energy, electricity and water in the total amount of 19.5 million rubles' worth.

Without dwelling on the many other indicators for capital construction, labor and wages, the use of material resources, and so on, I would like to note that measures for improving management and new equipment, as is evident from the passport, has enabled 100 persons to be released provisionally and an economic benefit of more than 8 million rubles to be obtained.

In examining the passport of the production association for transporting and supplying gas, the scale of Tyumentransgaz, which is one of the large gas-transporting organizations, attracts attention. Tyumentransgaz includes 14 compressor stations at which 242 gas-transfer units with a total power of 1,886 million kw are installed. Tyumentransgaz operates more than 6,000 km of trunk pipeline, a major proportion (77 percent) of which is 1,420 and 1,220 mm in diameter. In length of trunk gas pipelines, Tyumentransgaz yields only to Mostransgaz [Moscow Association for the Transport and Supply of Gas], Uraltransgaz, Khar'kovtransgaz [Khar'kov Association for the Transport and Supply of Gas] and Saratovtransgaz [Saratov Association for the Transport and Supply of Gas]; however, the share of gas pipelines 1,420 and 1,220 mm in diameter owned by the named associations is 4 to 48 percent of total length. The use of gas pipeline capacity by Tyumentransgaz in 1979 is characterized by the data shown in table 2.

Table 2

Gas pipeline systems	Use of designed capacity (percent)
Urengoy-Nadym, 1st line on the Urengoy-Pangody section	71.0
Medvezh'ye-Nadym, 1st and 2d lines	103.8
Urengoy-Nadym, on the Pangody-Nadym section	100.0
Nadym-Punga, 1st and 2d lines	
Nadym-Punga, 3d and 4th lines	104.8
Punga-N. Tura, 1st, 2d and 3d lines	110.1
Punga-Vuktyl, 1st line	95.0
Punga-Vuktyl, 2d line	96.0

The Tyumengaz passport gives the complete characteristics of the status of the industrial equipment installed at the compressor stations: the running time of the motors between overhauls--designed and actual, running time in hours before a malfunction, the operational readiness factor, and the equipment's technical utilization factor.

Appended to each passport of a gas-transporting organization is a diagram of the flows of gas. A place of much importance is given in the passport to economic indicators, such as labor productivity, reduction in consumption norms for material resources, and effectiveness in the use of fixed capital.

> The ministry is completing an analysis of appropriate subdivisions of the passports of the industry's enterprises and organizations, on the basis of which collections of indicators will be prepared, in which, along with statistical and accounting data, such indicators as the use of production capacity (for gas-recovery enterprises--use of the gas reserves in the fields' log), the rhythmicity of production, the qualitative characteristics of the output produced, indicators that characterize the organizational and technical level (the share of workers engaged in manual labor, the share of workers covered by the brigade form of work) and other indicators, will be reflected.
>
> The use of these collections during an analysis of technical and economic indicators of the industry's enterprises and organizations will enable production bottlenecks to be discovered, planning validity to be raised, and the establishment of more strenuous tasks to be promoted.

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STANDARDS BASE FOR GAS INDUSTRY BEING DEVELOPED

Moscow GAZOVAYA PROMYSHLENNOST' in Russian No 9, Sep 80 pp 4-7

[Article: "A Standards Base for the Industry Is Being Developed"]

[Text] The goal of a qualitatively new improvement in planning that the party and government have set calls for, as one of its basic measures, the creation in branches of the national economy, including the gas industry, of a system of progressive technical and economic norms and standards for the types of work and for the expenditure of labor, raw and other materials, fuel and power resources, equipment, production capacity and specific capital investment. The main goals in creating the indicated industry system of progressive economic, materials and equipment norms and standards are a deeper scientific substantiation of the proportion and state of balance of plans, a more complete use during planning of production reserves that have been found, a rise in production effectiveness, and the coordination of plan goals with the labor, material and equipment and financial resources required for their realization.

The system of progressive technical and economic norms and standards in the gas industry should be differentiated by type of resource, horizon of planning and level of management.

Work on the creation of a system of progressive technical and economic norms and standards in the industry has been under way since the start of the current five-year plan. During this time, standards subdivisions have been established and are functioning in the industry's scientific-research and design institutes and in associations which are developing procedural and instructional documentation and norms for the consumption of supply and equipment resources.

Moreover, there are standards subunits in TsNISgazprom [Central Standards-Research Center for the Gas Industry] and also in associations where there are NIS's [standards-research centers]. They provide for the formulation of labor norms and standards.

Much work has been done to create procedural and standards bases for supply and equipment resources. Industry standard-practice procedures and procedural instructions for determining materials-consumption norms and equipment requirements have been developed.

Standard Practice Procedures for Computing Consumption Norms for the Principal Chemical Reactants During the Recovery and Field Treatment of Gas for Long-Distance Transport (Temporary)

The standard-practice document, which was developed by VNIIEgazprom [All-Union Scientific-Research Institute for Economics, Production-Organization and Technical and Economic Research in the Gas Industry] and UkrNIIgaz [Ukrainian Scientific-Research Institute for the Gas Industry], is intended for individual norms (by field and by UKPG [integrated gas-treatment installation]) and group norms for the consumption of chemical reactants (methanol, glycol and $CaCl_2$).

The basis of the standard-practice procedures is the principle of scientific norm-setting, which is based upon the progressiveness of planning norms.

A norm should be a conductor of scientific and technical progress and a tool for implementing the savings regime.

In creating progressive norms, one proceeds from the fact that a norm for the expenditure of a chemical reactant is a planned measure for rational reactant consumption that is necessary for the production of a unit of output of the required quality in accordance with the planned level of the development of equipment, technology and production organization.

The Task for Scientific Norm-Setting

The main task for setting norms for material resources, including chemical reactants, is the establishment of scientifically substantiated, progressive norms for consumption with a view to making more effective use of resources.

The norm should reflect most completely the technological and organizational prerequisites for savings, promote maximum use of internal production reserves, be oriented to advanced experience in the saving of chemical reactants, and be backed up by organizational and technical measures that provide for its implementation.

A norm should be improved as technical progress proceeds and should reflect the planned level in the reduction of material expenditures. It should not include expenditures occasioned by deviation from adopted technology and operating regimes or expenditures for the elimination of accidents and similar nonproductive expenditures.

The Determination of Consumption Norms

Consumption norms for chemical reactants are subdivided into individual and group norms. The unit of measurement for norms for chemical reactant consumption during recovery and treatment of gas at the field is the specific consumption of the chemical reactant in grams per 1,000 m^3 of gas treated.

Since production associations include several gas fields, which in some cases recover gases of varying content under different thermodynamic conditions, the individual norm for chemical reactant consumption is the specific consumption of it at an individual UKPG or at the gas field, and the group norm is the weighted-average value that is computed on the basis of the individual norms.

The industry norm is the weighted-average value of the group norms of the production associations (or gas-field administrations).

Norms for chemical-reactant consumption during the treatment of gas at the field are determined by the computational method, which consists in a computation by element of expenditure and is based upon progressive, scientifically validated indicators for the use of chemical reactants. Where use of the computational method is inconvenient, the norm or its components can be determined by the experimental method (in laboratories or in the production environment). Moreover, the selective use of operational data and of average statistical values for specific consumption based upon an analysis and refinement of reporting data on the actual consumption of chemical reactants during preceding years is permitted.

The equations for computing reactant consumption norms during the industrial process and the example and the procedure for computing the norms for the consumption of methanol, diethylene glycol and calcium chloride that are cited in the standard practice procedures will serve as a good aid to the work of the industry's standards subunits.

Standard Practice Instructions for Developing Norms for Equipment Requirements for Furnishing Complete Sets of Equipment to Facilities

This document contains recommendations for determining the norms for the equipment requirements for facilities under construction during a planning period (a one-year or a five-year period).

The basis for determining equipment requirement norms is the continuous method of direct calculation. The requirement for equipment is determined for each facility under construction that incorporates equipment subject to norms, and the amount of capital investment is determined for all facilities under construction (including even those that do not incorporate equipment subject to norms).

Equipment requirement norms are calculated on the basis of facility norms that are worked out in accordance with the design and budget-estimating documentation or in accordance with analogs or standard flow sheets for each facility under construction.

Facility Norms

Facility norms for equipment requirements are the specific requirements for each grouping for which norms are to be set, per unit of capacity (structure, installation, 100 km of gas pipeline, and so on) being created. They are determined in accordance with the design and budget-estimating documentation or, where it is lacking, with analogs. For gas fields it is set on the basis of "Guidance for the Development and Use of Standard Technological Schemes and Modularized Outfitted Automated Equipment" and "Installations for the Integrated Treatment of Gas in a Modularized Version" (VNIPIgazdobycha [All-Union Scientific-Research and Design Institute for Gas Recovery]).

Structure of the Norm

The norm for equipment requirements is subdivided into industry and subbranch norms, which comprise the requirement for each classificational grouping per 1 million rubles' worth of planned capital investment (for general operations or for SMR [construction and installing work]).

Capital investment, where norms for equipment requirements are developed, is determined in accordance with the design and budget-estimated documentation, or (if there is none) in accordance with specific standard indicators, taking regional and topographic correctional factors into account.

Norms for equipment requirements to outfit capital-construction facilities that are intended for production purposes are computed for the planned period for each subbranch and for Mingazprom [Ministry of Gas Industry] as a whole.

The results of the calculations of facility norms and the requirements for equipment are reduced to standards index cards for facilities.

The standard practices instructions explain in detail the procedure for computing the industry's requirements for equipment. They contain a large number of appendices--forms for the classificational grouping of equipment, for design and budget-estimating indicators, for the composition of facilities under construction, for the structure of capital-investment distribution, and so on, which are intended for use in the practical activity of engineers and technicians of standards subunits.

In creating the procedural instructions, VNIIgazprom used the guidance materials of USSR Gosplan and NIIPiN [Scientific-Research Institute for Planning and Norm-Setting].

Standard Practice Procedure for Determining Indicators for Equipment Utilization of Gas-Recovery, Gas-Transporting and Gas-Treatment Enterprises

The standard procedures document, which was created by VNIIEgazprom and takes into account NIIPiN's requirements on the question of the development and introduction of the ASNo [automated system of allowances for equipment] equipment subsystem, contains the rules for determining the actual and the standard indicators for the basic production facility of the gas industry.

It is possible, by means of the actual indicators, to evaluate the production activity of an enterprise and to discover bottlenecks in the system made up of the gas wells, the industrial lines for gathering and treating the gas, and the trunk gas pipelines.

The standards indicators computed for the given methodology will serve as a basis for determining the expected volume for the recovery, transport and treatment of gas that will be provided by means of the installed (or operating) equipment, and also for determining the required amount of new capacity needed to carry out a prescribed production plan.

Evaluational Indicators for Equipment Utilization

In order to be able to evaluate the use of the operational equipment of gas-recovery, gas-transporting and gas-treatment enteprises, the equipment is subdivided into groups tentatively called technological threads.

In a quantitative evaluation of the use of equipment (the technological threads), evaluational units of measurement are used:

thread-days, which determine the number of threads for each day of the reporting (or planned) period by type of utilization (in operation, in reserve, in planned preventive maintenance, and idle), and the scheduled average number; and

the average number of threads by type of utilization and scheduled average number, computed per calendar day for the reporting period.

For these purposes, actual evaluational indicators have been adopted: productivity of the technological threads in operation, coefficients of extensive and intensive use, the reserve, PPR [planned preventive maintenance] and idle time.

The standards indicators for use of the technological threads during the planned period are determined on the basis of the actual indicators for the preceding period (where the period is at least 3 years).

The standard practice procedure includes examples of the computation of actual indicators of the use of equipment, and there are many appendices in the shapes of forms and tables that can be used as auxiliary instructive material in norm-setting practice.

Standard Practice Instructions for Developing Norms for Requirements for Cable Products for Outfitting Capital-Contruction Facilities of the Gas Industry

These instructions contain recommendations for determining norms of the requirements for cable products for the industry's facilities that are under construction over a long period of time.

The norms of the requirement for cable products for facilities that are under construction and that are intended for production purposes are computed by the continuous method of direct computation, while the norms for facilities for nonproduction purposes are determined by the extrapolation method.

Facility norms and the composition of the facilities under construction for each subbranch are the basis for the norms that are being developed.

Procedure for Determining the Norms for Requirements for Cable Products

Norms for requirements for cable products are subdivided into industry and subbranch requirements.

In order to outfit capital construction facilities that are intended for production purposes, the norms for cable-product requirements for the planned period are set on the basis of facility norms that are developed for each facility (that is under construction or is being rebuilt).

The requirement for cable products is computed in accordance with design documentation, or (in case there is none) on the basis of analogs or standard flow sheets (for facilities of the gas-recovery and gas-treatment subbranches).

Subbranch norms are determined in accordance with the standards index cards for facilities under construction that have been refined on the basis of data submitted by the associations and in accordance with the capital investment structure.

Industry norms for cable-product requirements are developed on the basis of corrected subbranch norms.

The formulas and procedures for computing standard indicators that are cited in the procedures document facilitate greatly the labor of workers of the standards subunits.

A comprehensive program for developing and improving the system of technical and economic norms and standards during 1981-1985 has now been prepared in Mingazprom. It calls for further expansion of the standards base with a view to raising the quality of planning, a more penetrating disclosure and use of production reserves, and a rise in its effectiveness. The comprehensive program contemplates the conduct of a large amount of scientific research on improved organization of the system for setting norms and on methods for developing norms and standards for long-term, five-year and current planning, based upon the wide use of computers for setting norms, with a view to creating eventually an automated system of norms and standards (ASN) as a component part of the automated systems for planning computations (ASPR's] and of the industry's automated system for control at all levels.

Realization of the integrated program calls for the participation of functional administrations of the ministry, branches and subbranches, of regional scientific-research and design institutes, of All-Union industrial, science-and-production and production associations, and of enterprises and organizations of the gas industry.

The composition of norms and standards for the industry system, which will reflect the specifics of social and economic planning for the gas industry, has been set on the basis of an analysis of a system of norms recommended by USSR Gosplan. Norms for the consumption of fuel and power resources, the requirements for equipment and cable products, specific capital investment, and the mastery of design capacity have been broken down in the industry system of norms into independent collections.

Breakdown of the norms and standards for fuel and power resources into an independent collection was occasioned primarily by the energy intensiveness of gas-transporting processes and by the trend toward increasing the requirement for gas for the in-house needs of gas pipelines that are equipped with gas transfer-pumping units that have gas-turbine drive because of the increase in distance over which the gas is moved.

Collections of norms and standards for requirements for equipment and cable products, for specific capital investment, and for the mastery of design capacity are extremely important in solving the wide range of questions associated with planning the development and siting of the gas industry.

In considering the existence of a close interdependence, the norms and standards for the use of equipment and of design capacity have been amalgamated in the industry system into one collection. This will enable the indicated norms and standards to be formulated on a single methodological base.

The industry system has established a procedure for the formulation, review and confirmation of norms and standards specifically for each standard indicator.

The goals for the standards services of the ministry and of scientific and design organizations are to improve increasingly the standards work and to put it on a unified scientific basis. In order to achieve the stated purpose it is necessary: to reinforce the standards services with qualified personnel, to examine, by planning level, the list of materials for which norms are being set for the Eleventh Five-Year Plan and for the longer term, to raise the level of coordinational work in the industry, to create a reliable informational base at enterprises and associations by providing more complete and timely accounting and reporting of the use of raw and other materials and of fuel and power resources, to introduce more rigid monitoring over the introduction and the planned reduction in the norms and standards and over the requirement for materials, and to introduce into practice material incentives for the reduction of norms and the saving of raw and other materials.

Introduction of the industry system of technical and economic norms and standards will enable planning and management in the gas industry to be raised to a high level and the effectiveness of planning the requirements for the distribution and use of resources to be greatly raised, thereby providing for a reduction in the materials intensiveness of production and in the operating costs of production.

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FUELS

FRG-USSR COOPERATION ON CRANE SHIP

Vaku VYSHKA in Russian 16 Aug 80 p 2

[Article by A. Gol'denberg; "The Azerbaijan Lifts a Record Weight"]

[Text] The heaviest load in the history of navigation and construction of offshore oil facilities in the Caspian has been lifted in Baku harbor. This record, which at the present time is 1,000 tons, was set by the crane ship Azerbaijan, which was built at the docks of the famous West German company Blom and Voss in Hamburg on order from the Soviet Union.

The greyish red boom of the giant self-propelled unit closed its 70-meter steel hands over South Bay where the crane ship is undergoing testing. Drawn by steel cables up to 15 centimeters in diameter, it easily grasped a 1,000-ton metal pontoon filled with water.

"That is nothing," A. V. Kiselev, captain of the unusual ship, told our Azerinform correspondent. "This is testing. Next it will lift 1,100 tons, then 1,200, 1,300, and so on up to 2,750 tons. Beginning at 2,000 tons it will start using two hooks simultanecusly."

Crane Ship in Testing

With respect to working load capacity, which is 2,500 tons, the Azerbaijan has no equal in the country. It is 10 times more powerful than the biggest crane ship now working in construction of offshore oil fields in the Caspian.

The giant crane will be able to lift modules of the steel islands weighing thousands of tons to a height of 32 meters and install them in offshore areas at depths of as much as 300 meters, which is more than three times the depth at which Caspian engineers have worked before now.

The Azerbaijan will operate together with self-unloading barges on which the foundation unit will be delivered to the point of installation.

We are sitting in the comfortable captain's cabin from which conversations are held almost daily with Hamburg, Cologne, and various West German cities where the manufacturing firm placed orders for the various types of equipment on the crane ship. Uwe Kraft, the firm's chief coordinator, and his colleagues consult with their executives on various problems and resolve questions that arise in the course of launching and adjustment operations.

Some of the equipment has already been tested with participation by specialists from West Germany. Company representatives are adjusting the instruments and testing the hoisting capacity of the primary and auxiliary equipment of the crane.

After launching and adjustment work on the crane is completed, A. V. Kiselev says, the ship will go out for field testing. The main power plant and anchor mechanism will be tested, as will the ship's maneuvering and other characteristics. The unique diving complex which was supplied by the French firm Comex is very interesting; testing on it will begin on 1 September. These tests will be conducted jointly with the Khar'kov special technological design bureau of the USSR Ministry of Gas Industry, the USSR Shipping Register, and public health agencies. Two divers who went through training in Marseilles will participate in the tests. It is contemplated that they later will become instructors to train new divers.

As already mentioned, the workers will be operating at sea at depths of up to 300 meters. Work of this kind has not been done at such depths before in our country. Therefore, the upcoming tests are drawing heightened attention. During all underwater operations the divers will use a pressure chamber for adaptation. They will spend four hours under water and the remainder of the time in the chamber. It will go on that way until the work is done. After they are finished the underwater workers will spend 12 more days in the pressure chamber before coming back to land.

It is expected that the Azerbaijan will join the ranks of working ships of Kaspneftegazflot [Administration of the Caspian Petroleum and Gas Fleet] and begin building offshore facilities in the Caspian before the end of the year.

"The contract between the USSR and the FRG, which is now 10 years old," A. V. Kiselev said, "is promoting not only development of mutually advantageous economic relations between our two countries but also political stability in Europe. We hope that cooperation between the USSR and the FRG will continue to grow broader and stronger in the future for the good of the peoples of the Soviet Union and Federal Republic of Germany and in the interests of international detente and peace."

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SCIENTIFIC RESEARCH FOR KUZNETSK BASIN COAL MINING IS FRAGMENTED

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 20 Sep 80 p 2

[Article by Ya. Frayman, manager of the Department of Mining Industry Economics and Organization of the Kuzbass Polytechnic Institute, candidate of engineering sciences and assistant professor, and V. Bedin, manager of the industry's Laboratory for Economics and Production Organization (Kemerovo): "The Kuzbass's Scientific Potential:]

[Text] A reduction in the pace of growth of labor productivity by about 1 percent per year in the coal industry of the Kuzbass [Kuznetsk Coal Basin] has been noted during the years of the current five-year plan.

At some mines this drop-off is associated with difficult mining-geology conditions, but there are few such enterprises. For the main group of 67 coal mines, nature's surprises do not explain the worrisome trend. There are other causes here. These include reconstruction that has been stretched out for decades, delayed updating of the machinery pool, and a chronic deficit in deliveries of equipment and spare parts. While last year's production reserves, which were thrown into the gap, were still adequate to cover the effect of these factors, this will no longer be the case for the forthcoming five-year plan. Therefore, the way out is seen as an examination of the principles of organization and control of production that now prevail, the development of a more improved technology for mining work, and the creation of highly productive mining equipment.

The experience of the Karaganda, Donets, Vorkuta and even younger mining basins indicates that only a well-organized scientific-research complex, in collaboration with production work, is capable of solving the basin's complex tasks. In the Kuzbass production work is being developed and concentrated, whereas mining science, on the contrary, disperses and fragments its forces.

Now working in the basin are the Kuzbass Polytechnic Institute and the Siberian Metallurgical Institute, where more than 250 scientific workers are at work in departments that produce specialists for the mining industry and in industry laboratories. Two laboratories of the Siberian Division of the USSR Academy of Sciences, six laboratories and sections of branch institutes and five scientific-research institutes are also working on coal problems. As we see, the scientific potential is quite respectable.

Kuznetsk scientists are participating in the solution of many important coal-mining problems. However, it is unfortunate to note that the isolation of the research does not enable research results to be introduced into production in a short time. Educational institutes and branches of academic and industry scientific-research institutes are not keeping up with the basin's requirements, mainly because separately none of them possesses an adequate scientific potential and experimental base, and each labors, as they say, in its own compartment. And indeed their work is in unexplored areas. In the two above-mentioned institutes alone, 64 research tasks are being carried out on coal topics alone at a total annual cost of about a million rubles. Thus, there are 14,000-15,000 rubles for each "coal" topic, the financing being, as a rule, not long-term, and it depends upon the capabilities of the client enterprise. And if an instructor or scientific worker of a vuz has not managed during the year to achieve his goals (initiatives have not been lacking!), he is switched from coal to some other topic.

During the past decade not one sizable science-and-production conference in the Kuzbass can be recalled that would draw scientists and production workers to its problems. There are not at present even concrete proposals for improvement of the coal basin's science. The potential standard bearer of mining science--the Institute for Mining Affairs of the SO AN SSSR [Sibertian Division of the USSR Academy of Sciences]--engages primarily in problems other than coal and it has been located in Novosibirsk. The Kuznetsk Scientific-Research Institute for Coal (KuzNIUI) should, it would appear, coordinate long-term research topics. However, over many years of work, while solving problems of undoubted importance in the Prokop'yevsk-Kiselevsk region, this institute has not managed to arrange for creative collaboration with vuzes and scientific-research organizations that are working with coal, and it will not be able, therefore, to be the head institute for the Kuzbass's mining science.

The significance of the Kuzbass's science in solving fuel and energy tasks for the national economy is growing substantially. Here construction has begun on coal enterprises of the Kansk-Achinsk power-engineering complex, and,not far off,development of coal fields along the BAM [Baykal-Amur Mainline] has started. Along with the peculiarities of each of these regions, they also have no little bit in common--climatic characteristics, demography and a number of other factors. Already today all the prerequisites for developing a comprehensive regional program of scientific and technical progress with earmarked financing exist in the Kuzbass.

The intensity of the flow of coal from the country's eastern regions will grow. Because of this, new searches and new and important difficulties await scientists. Therefore, it is necessary, even today, to make sure that plans for the forthcoming five-year period will be implemented in the most economical way.

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DIFFERENT EXPLOITATION TECHNIQUES NEEDED FOR SPECIAL CONDITIONS

Moscow NEFTYANOYE KHOZYAYSTVO in Russian No 10, Oct 80 pp 33-36

[Article by K. B. Ashirov, Kuybyshev Polytechnic Institute: "The Principles of Regional Exploitation of Petroleum Deposits"]

> [Text] This article is presented for the purpose of discussing the article by A. P. Krylov published in the journal NEFTYANOYE KHOZYAYSTVO, No 6, 1980 — editors.

Discussion of Academician A. P. Krylov's article [1] is timely because there are substantial disagreements on certain fundamental issues of the exploitation of petroleum deposits.

The fundamental principle of A. P. Krylov's theoretical views is based on the goal of exploiting deposits with minimum allowable expenditures for drilling and well construction and, consequently, more efficient use of producing wells because with a less dense network of wells each well has larger reserves and conditions are established for prolonged, stable operation of each well. It is natural that the prime cost of petroleum for the primary (but not full) period of exploitation usually adopted will be relatively low. In view of possible complications during complete exploitation of reserves, A. P. Krylov admits the need to have a small number of reserve wells to be used as necessary.

Despite certain advantages, the fundamental points presented by A. P. Krylov [1] have shortcomings. There was a time when these principles were adopted as the basis of work in the sector and promoted a rapid increase in petroleum extraction. But when certain large deposits entered the final stage of exploitation and pools with smaller reserves were discovered in recent years it became impossible to follow these principles. This led to a situation where subsequent analyses of the exploitation of large deposits drilled with sparse networks of wells had to lower figures for petroleum production originally adopted in projections by 12-33 percent despite steps taken to improve conditions for complete exploitation.

In the coming years petroleum extraction can be increased by improving the efficiency of geological exploration and increasing oil production at deposits being exploited. These are precisely the goals set for petroleum workers by the resolutions of the 24th and 25th CPSU congresses.

Data have now been accumulated that confirm that success in exploitation is linked to the possibility of recovering petroleum from all intervals of producing layers which differ by physical properties. On the basis of a summary of domestic and foreign experience V. N. Shchelkachev [2] has concluded that high petroleum production can be achieved under the following conditions: each heterogeneous sector of a layer should be worked by wells drilled in it; the density of well networks affects petroleum production; receiving high petroleum production depends on the duration of exploitation of flooded wells. In addition, high petroleum production may be achieved by using methods of artificial influence taking into account specific geological-physical and technical-economic conditions of exploitation. Of course, these conditions can only be realized with adequate knowledge of details of the geological structure of the pools and the physical properties of the layers and fluids.

The entire theory and all hydrodynamic calculations are structured primarily for the model of large deposits. But an increasing number of deposits with small reserves are coming into operation, and their exploitation requires a different approach.

A problem with the existing theory and practice of planning exploitation of deposits is the endeavor to average out the parameters of producing layers and the fluids that fill them. In addition, practically no consideration is given to changes occurring in initially adopted calculated parameters during the exploitation process. Therefore, existing efforts to evaluate the calculated parameters, the calculations themselves, and the exploitation technology based on them cannot guarantee full recovery of petroleum reserves, that is the possibility of achieving high final petroleum production. This approach to the problem of increasing petroleum production is even confirmed by A. P. Krylov's article, where the author does not deal with the issues mentioned above and uses averaged parameters in the recalculations that are given.

Let us consider actual patterns of changes in parameters, observed in practice but not usually considered in planning exploitation. A study of the nature of the structure of the sandstones of the Bobrikovo horizon in structural uplifts revealed a general pattern of increase in the thickness of terrigenous layers and their arenosity (sandiness), as well as their porosity and permeability, in the vault segments and a decrease in the flanks, as can be seen from Table 1 below.

Heterogeneities are similarly distributed in the sandstones of the terrigenous Devonian layer. In the Pereyskiy horizon of the Middle Carboniferous sandstones in the vaults of uplifts are represented by pockets and taper out completely on the flanks. More significant heterogeneity of carbonate collectors is frequently linked to their reef origin and intensive leaching of the vault sectors of uplifts. In general, when going from the vault to the floor of pools a decrease in porosity and permeability will be observed with partial or complete sealing of the pools on the floor by a secondarily cemented horizontal layer. In such a case permeability may vary by a factor of 5-10 times and more.

Within particular pools the difference in viscosity of the layer petroleum may be equally significant. The greater the thickness of the layer, the more

Table 1

Deposits	Sectors of Structure	Thickness, meters Bobrikovo Horizon	Sandstones of Layer $B_2(C_1)$	Porosity %	Permeability, md
Mukhanovskoye	Vault	80–90	65–70	20.3	1,000
	Flanks	79–87	45–55	18.7	635
Pokrovskoye, Kubyshevskaya Oblast	Vault	30–32	8–11	28.0	1,000–4,150
	Flanks	20–23	0–3	7.0	up to 160
Pokrovskoye, Oremburgskaya Oblast	Vault	31–38	12–16	25.0	816
	Flanks	25–30	0–4	13.5	119
Sorochinskoy-Nilol'skoye	Vault	32–34	11–16	12.5	370
	Flanks	27–32	9–2 [sic]	9.5	92

Table 2

Absolute Marking of Top Perforation Hole, m	Saturation Pressure kgf/cm	Gas Factor, m /ton	Density of Layer Petroleum	Viscosity of Layer Petroleum	Component Composition of Gas, mole % N_2	CH_4	C_2H_6 + higher
-1,134	61.0	29.5	0.876	25.8	14.3	26.6	57.3
-1,149	61.5	29.0	0.883	27.5	15.7	26.1	55.7
-1,167	59.0	25.0	0.887	31.0	20.9	23.1	54.2
-1,169	55.0	20.0	0.887	39.9	21.4	23.5	53.3
-1,174	36.6	10.3	0.909	64.1	22.9	21.8	49.6

significant the difference can be. The pattern of decrease in gas factors and saturation pressure from the roof of a pool to its floor is analogous. (Table 2 above shows change in the parameters using the example of B_2 at the Radayevskoye deposit.)

It is natural that if the properties of the collectors and petroleum within a single layer or pool change in a completely regular and quite abrupt manner, such changes will be reflected even more significantly at multilayered sites. This is even more strongly reflected in the conditions of recovering reserves from combined intervals with worsened physical properties that frequently do not participate in exploitation [3].

Consideration must also be given to the presence within pools and on the surface pore channels of hydrophobic coatings in the form of films and inclusions of viscous petroleum and solid bitumens [4]. The content of viscous petroleum and solid bitumens sometimes is so great that some of the interstices are almost completely filled by them. This factor is not taken into account because during laboratory analyses of porosity, permeability, and petroleum saturation the dense and viscous hydrophobic components are completely removed by extraction by hot solvents during the process of preparing samples.

In addition to the heterogeneity of collectors and different properties of petroleums in the pools, it is necessary to consider changes that occur through the impact of industrial conditions and exploitation. Work [5] has demonstrated that where there are significant depressions the collectors compact irreversibly and their permeability decreases. The latter may be the result of the formation of thickened films of bound water when fresh water is pumped in, the constriction of filtration channels when bacterial films are deposited on their walls, the introduction of suspended pollutants into the layers together with the pumping water, the precipitation of gypsum and other salts in the layers because of the incompatibility of the pumping water and subterranean water, and other factors.

A great deal of data has been accumulated in recent years that confirms the advisability of both drilling into pools with dense networks of wells and reducing the size of extraction sites [3].

Therefore, when deciding the problem of increasing petroleum production it is necessary to review the methodology used to plan exploitation. We should change from averaged parameters oriented to incomplete recovery [6] to parameters that consider maximally full exploitation of the entire volume of balanced petroleum reserves, including the part that is located in unfavorable conditions. However, this approach to exploitation of petroleum deposits sharply contradicts the principles expressed by A. P. Krylov [7], who believes that for further increasing petroleum extraction with minimum expenditures of capital and physical resources it is essential that the well networks used not be lower with respect to expenditures than economically expedient levels.

Should we strive for high indicators in the initial stages of exploitation by sparse networks of wells without taking steps to recover the full volume of balance reserves? Even if one agrees with A. P. Krylov as to the advisability of drilling for petroleum sites with sparse well networks, to recover the reserves of water-petroleum zones in conformity with this principle even sparser networks must be used. This will result in lower petroleum production than in the main part of the pool because geological and physical conditions of recovery in the water-petroleum zones are most difficult. It is unquestionable that with very sparse networks of wells 25-60 percent of the reserves of deposits with vast water-petroleum zones will be unrecovered.

We must also consider the frequently expressed views of certain specialists on the possibility of increasing the density of well networks at deposits for exploitation at a later time. This view can hardly be accepted because plans for the near future envision exploiting deposits while taking steps to increase the flow of production, speed it up, and insure full recovery. Field experience shows that the application of any type of influence is always more efficient if the stock of producing and injection wells is built all at once. Moreover, when drilling organizations return to sites that are already in operation, the cost of new wells is 50-100 percent more than for the original drilling. Thus, if we accept A. P. Krylov's views and continue drilling pools using sparse networks, it will be necessary in the future to increase the density of the well networks for efficient application of recovery techniques, but in this case the drilling will be more expensive and its effectiveness will be lower.

At the present time we do not have substantiated ideas of expedient exploitation periods. There is no question that an unlimited increase in the length of exploitation with endless refinements of pool structure does not help create an efficient model of exploitation and, as observed above, creates additional difficulties for taking steps to increase petroleum production.

Furthermore, the length of the period of well operation is an important factor in determining exploitation periods. Thus, an analysis of data on wells at the Romashinskoye deposit showed that where waste water was used for flooding the injection wells worked for 5-6 years because of intensive corrosion, while producing wells lasted 18 years [8]. Needless to say, if the length of exploitation of deposits is increased without limits, especially for deposits with small reserves, it will be necessary to drill a significant number of wells to insure steady replacement. Naturally, it is more efficient to drill a more dense network of wells at the deposit immediately, determine its structure more precisely, select a technique of supplementary influence that insures maximum petroleum production, and fit the process within an exploitation period of 15-20 years, that is, the depreciation period of the wells.

Another reason to reduce the exploitation period involves a factor not considered by many specialists, which is the economic disadvantage of allowing land allocated to petroleum workers to be kept from other uses for a longer time. When oil workers use agricultural land for oil field construction, they take it out of agricultural use for a long time. From a state point of view it is advisable to see that the land taken is returned to agriculture more quickly after petroleum use and restoration.

There is no doubt that through the combined efforts of scientists and production workers it will be possible in the near future to achieve a further improvement in the scientific foundations of rational exploitation of petroleum deposits.

FOOTNOTES

1. Krylov, A. P., "Economically Allowable Thinning of Wells Networks from the Standpoint of Petroleum Production," NEFTYANOYE KHOZYAYSTVO, 1980, No 6, pp 28-30.

2. Shchelkachev, V. N., "Analysis of Experience with the Introduction of the Latest Techniques of Increasing Petroleum Production in the United States," NEFTYANOYE KHOZYAYSTVO, 1979, No 4, pp 69-73.

3. Akhnadiyev, G. M., Muslimov, R. Kh., Diyashev, R. N., et al., "Bringing the Low-Productivity Collectors of the Romashkinskoye Deposit into Use," NEFTYANOYE KHOZYAYSTVO, 1979, No 6, pp 37-33.

4. Ashirov, K. B., Borisov, B. F., Tyurin, V. I., et al., "Identifying Interlayers with Included Solid Bitumens in Carbonate Collectors," GEOLOGIYA I RAZRABOTKA NEFTYANYKH MESTOROZHDENIY. TR. GIPROVOSTOKNEFTI, Vyp XXIII, Kubyshev, 1974, pp 150-154.

5. Ashirov, K. B., Vyzhigin, G. B., Danilova, N. I., et al., "Change in the Collector Properties of Producing Layers During Exploitation of Pools," NEFTYANOYE KHOZYAYSTVO, 1980, No 3, pp 29-33.

6. Kotsyubinskiy, V. L., Fazlyyev, R. T., and Fattakhov, B. Z., "Substantiating the Industrial Conditions of Petroleum Pools," NEFTYANOYE KHOZYAYSTVO, 1980, No 2, pp 21-44.

7. Krylov, A. P., "The Rate of Exploitation of Petroleum Deposits," EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA. SIB. OTD. AN ASSR, 1980, No 1, pp 18-21.

8. Muslimov, R. Kh., Yusupov, I. G., and Zagirov, M. M., "Refining the Technique for Analyzing Reserve Wells Considering the Technical Condition of the Wells and Work To Increase Their Operating Reliability," NEFTYANOYE KHOZYAYSTVO, 1977, No 3, pp 22-26.

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11,176
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NEED TO ORGANIZE MINING SCIENCE WORK IN KUZNETS BASIN CITED

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 20 Sep 80 p 2

[Article by Ya. Frayman, head of the department of the economics and organization of mining industry of the Kuznets Basin Polytechnic Institute, candidate of technical sciences, and docent, and V. Bedin, head of the sectorial scientific research laboratory of production economics and organization, Kemerovo: "The Scientific Potential of the Kuznets Basin"]

[Text] During the current five-year plan the rate of growth of labor productivity in the coal industry of the Kuznets Basin has decreased roughly one percentage point a year.

At some mines this decline is linked to difficult mine geological conditions, but there are only a few such enterprises. For most of the 67 mines this alarming trend cannot be explained by unforeseen natural conditions. There are other reasons in these cases. Among them are reconstruction projects that have dragged on for decades, delay in updating machinery, and chronic undersupply of equipment and spare parts. In past years the production reserves which have been introduced to compensate for this were adequate to make up for the impact of these factors; this will no longer be true in the coming five-year plan. Therefore, the answer envisioned is to revise established principles of production organization and management, develop improved mining technology, and build highly productive mining equipment.

The experience of the Karaganda, Donets, Vorkuta, and even younger coal basins shows that only a well-organized scientific research complex cooperating with the production sphere can resolve the complex problems facing a basin. But in the Kuznets Basin production is developing and becoming concentrated at the same time as mining science is dispersing and splitting up its forces.

The basin today has two higher educational institutions, the Kuznets Basin Polytechnic Institute and the Siberian Metallurgical Institute, which employ more than 250 scientific workers in the departments that graduate mining specialists and in sectorial laboratories. In addition there are two laboratories of the Siberian Department Academy of Sciences USSR, six laboratories and divisions of sectorial institutes, and five scientific research institutes working on the problems of coal. As we see, the scientific potential is quite respectable.

Kuznets scientists are participating in finding solutions to many major problems of coal extractions. However, we must observe with regret that the dispersion of research makes it impossible to introduce research results into production quickly. The educational institutes and branches of academy and sectorial scientific research institutes cannot keep up with the needs of the basins chiefly because each of them alone, not presenting adequate scientific potential or experimental facilities, is working, so to speak, in its own pigeonhole. But indeed, they have a great deal to do. There are 64 research projects with a total annual cost of about 1 million rubles at just the two above-mentioned institutes and only in the subject area of coal. Financing, however, is not long-term and depends on the capacities of the client enterprise. So if a teacher or scientific worker at the higher educational institution is unable to get financing for a certain year (lack of initiative!), he is switched from coal to some other subject.

We cannot recall a single significant scientific-production conference in the Kuznets Basin in the last 10 years that brought scientists and production workers together to consider these problems. There are no concrete proposals at the present time to improve coal mining science in the basin. The potential leader in mining science, the Institute of Mining of the Siberian Department of the Academy of Sciences USSR, is concerned chiefly with "non-coal" problems and is located in Novosibirsk. The Kuznets Scientific Research Coal Institute should, it would seem, coordinate prospective research topics. During its many years of work, however, while solving unquestionably important problems in the Prokop'yevsko-Kiselevskiy region,this institute has been unable to organize creative cooperation with higher educational institutions and scientific research organizations working on coal and thus have been unable to become the leading organization in mining science in the Kuznets Basin.

The importance of Kuznets Basin science in solving fuel-energy problems of the national economy is increasing significantly. Construction has begun here on the coal enterprises of the Kansk-Achinsk energy complex, and development of the coal deposits along the Baikal-Amur Mainline is not far distant. Alongside their unique features these regions have many things in common: climatic features, demography, and various other factors. The Kuznets Basin already has all necessary conditions to develop a comprehensive regional program of scientific-technical progress with special-purpose financing.

The intensity of coal supply from the eastern regions of the country is going to increase. In connection with this our scientists face new research and significant new difficulties. Therefore, the time has already come to take steps to see that the plans of the upcoming five-year plans are carried out by the most economical means.

11,176
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BASHKIR OIL PRODUCTION ASSESSED

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 5 Oct 80 p 1

[Article by I. Payvin]

[Excerpts] The oil workers of Bashkiriya have produced 190 million tons of "black gold" since the beginning of the 10th Five-Year Plan. This corresponds to the task established in the five-year plan.

Almost 50 years have passed since the first Bashkir oil was produced. But the reserves of the old fields have not yet been depleted. Oil prospectors are carrying on their difficult search in all regions of the autonomous republic. More than 40 pools of fuel have been found during the past few years.

The method of the consolidated network of wells is used extensively to intensify production in the fields. For example, approximately 2,000 new wells were drilled at the suggestion of geologists and scientists at the Arlanskoye field. More than 47 million tons of additional oil were produced from them.

The rates of development of fields and sinking of wells were accelerated considerably with regard to cluster drilling and the use of industrial methods of constructing producing capacities. A total of 8.5 million meters of rock has been drilled since the beginning of the five-year plan--two million meters more than the established task. A total of 4,500 oil wells has been constructed and turned over during this time.

A complex of measures which provide maximum sampling of fuel from each field and from each well has been developed and successfully implemented. Pumping waste waters into the underground horizons for more complete expulsion of oil from the beds contributes to this. A great deal of work is being done to equip the wells with electric centrifugal pumps. Sixty percent of oil is produced here by these units.

"Fulfillment of these and other measures," says the general director of the Bashneft' Association Ye. Stolyarov, "permits us to maintain a stable and high level of fuel production--more than 40 million tons annually."

One of the most complex technical problems--extending the operating period of wells between repairs--is being solved successfully at the Bashkir fields. The call of foreman A. Basyrov of the Chekmagushneft' Administration, who called for organization of a movement under the slogan "Provide a Working Guarantee for Repair of Wells," played an important role here. The spread of this movement has produced a good effect: the period of operation of wells between repairs comprised 270 days last year.

Yet another important concern recently appeared among the Bashkir oil workers--to help in developing the oil reserves of Western Siberia. The brigades of the Birskoye Drilling Administration constructed approximately 300 wells in Tyumenskaya Oblast. This assistance will be intensified in the future.

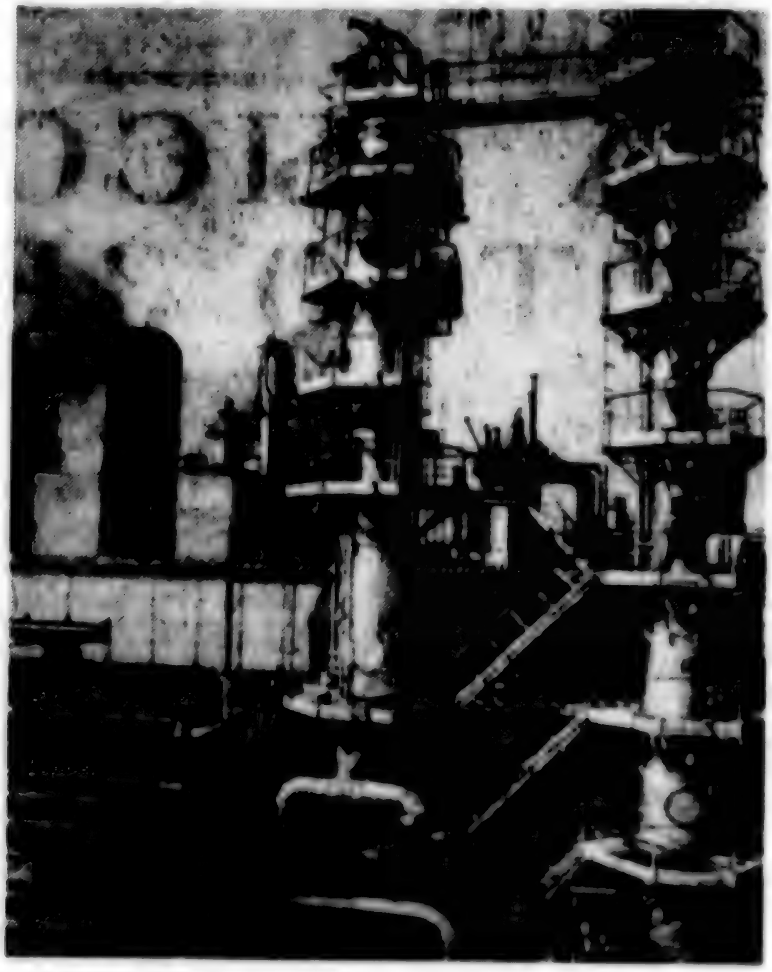
6521
CSO: 1822

PAREKS OIL REFINERY

Moscow TRUD in Russian 1 Oct 80 p 1

[Article: "Pareks on the Eve of Startup"]

[Text] Starting and adjusting operations have begun at the new Pareks complex in Kuybyshevskaya Oblast at the Syzran Oil Refining Plant imeni 60-letiya Oktyabrya. Liquid paraffins and initial raw material in production of feed protein will be produced here.



The Pareks Complex

6521
CSO: 1822

OILFIELD PERFORMANCE FOUND WANTING IN TURKMENISTAN

Ashkhabad TURKMENSKAYA ISKRA in Russian 31 Oct 80 p 2

[Article by G. Vasil'yeva: "The Oilfield Workers' Urgent Tasks"]

[Excerpt] The third party conference at the production association Turkmenneft' [State Association of the Turkmen Oil Industry] convened little more than 2 months prior to the end of the Tenth Five-Year Plan, and this circumstance imposed a certain imprint also on the accountability report of partkom secretary Ya. B. Bayramov and on the remarks of the delegates: not being restricted by the bounds of the 2-year reporting period, they cited the preliminary results for the 5-year period as a whole.

The reporter fitted this account to all the indicators of the economic activity of the association and its subunits. But the economic affairs of Nebit-Dag oilfield workers do not give cause for complacency. True, there are certain achievements. Since the start of the five-year plan, natural-gas recovery has doubled in volume. Casing-head gas utilization has reached 95.3 percent of the resource. By the day the party conference convened, 26 brigades of the main trades and 9 enterprises and organizations of the association had fulfilled their five-year plan tasks ahead of schedule.

But the value of all these achievements pales in the face of an incontrovertible fact: the oilfield workers' collective, on which the high title of the Order of Lenin was once conferred for labor successes, today lags in recovery work. During a period of almost 5 years, Turkmen oilfield workers fell short in deliveries to the country by more than 13 million tons of crude and about 14 million cubic meters of gas.

There are objective factors that led to such a situation. The chief one is that the oilfields have entered the phase of declining production at flowing wells. While 10 years ago more than 90 percent of the oil in West Turkmenistan was recovered by natural flow, today about 70 percent of it is recovered mechanically. Compensation for the drop in flowing-well production requires more active development of the petroliferous horizons and maintenance of formation pressure by water and gas injection. And this means that it is necessary to build--many, that is--electric-power lines and hard-topped roads to each well, footings for beam-pumping units, PPD [formation-pressure maintenance] facilities, and so on. Yet construction is the weakest spot in the association's activity. Erection of the most necessary facilities is postponed from year to year, and the quality of construction frequently is very poor. Back in April 1979 the Leninneft' [Leninsk State Association for the Oil Industry] NGDU [Oil and Gas Recovery Administration] accepted a PPD facility for the first, second and third horizons of the Yugo-Vostochnyy Kotur-Tepe field for operation. The state acceptance document was signed despite the fact that the pumping unit for water treatment and the inhibition installation (for freeing the oil of water) still had not been erected and electric-power lines had not been built, yet these were facilities without which the entire complex of structures being built cannot operate.

But there are also factors of a subjective nature. The speaker cited this circumstance: the equipment of the formation-pressure maintenance facility at Nebitdagneft' [Nebit-Dag State Association for the Oil Industry] is not being given the proper servicing, monitoring of maintenance of the installations is poor, and accidents are frequent. More than 300 wells that are counted as operational do not achieve the expected capacity, and work to increase their activity is being conducted slowly and not always with good quality. The number of inactive wells greatly exceeds the standard.

The lag in recovery is being exacerbated by unsatisfactory work of the drillers, because of which plans for an increase in oil and gas reserves remains unfulfilled. The low reliability of geological forecast information frequently leads to complications and accidents in drilling. In 2 years 156 accidents occurred, and almost half of these were accidents during development drilling. Elimination of the consequences required, in all, about 160,000 man-hours, and this means a loss of more than 120,000 meters of penetration.

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FIX TO PREVENT PUMP-STATION TURBINE BEARING FAILURE DEVISED

Moscow GAZOVAYA PROMYSHLENNOST' in Russian No 9, Sep 80 p 46

[Article by M. A. Tyapkin of Soyuzturbgaz [All-Union Association for Gas Turbines]: "One of the Causes of Destruction of the Radial-Thrust Bearing of the TKO-25/64 Expansion-Turbine Unit"]

[Text] Article on file.

Industrial tests of TKO-25/64 expansion-turbine units in the UKPG's [Integrated Gas-Treatment Installations] of the Shebelinskoye, Yefremovskoye and Vuktyl natural gas fields have revealed the weakest link that restricts the service life between overhaul of these units. This link is the 126212Yu radial-thrust bearing, which is found in the turbine wheel's bearing support.

The main cause in all cases of destruction of the outer ring of the 126212Yu radial thrust bearing that have occurred during operation has been reduction of its radial clearance and the radial overload thereof.

In order to preclude this factor, and, consequently, to increase the service life between overhauls of the radial-thrust bearing in the bearing component of the turbine wheel support of all TKO-25/64 expansion-turbine units, a temperature compensator made in the form of a plastic radial damper was installed. It has completely precluded cases of radial-thrust bearing breakdown becuse of destruction of the outer ring during the operation of TKO-25/64 expansion-turbine units at the UKPG's of the Shebelinskoye and Yefremovskoye gas fields.

At UKPG-2 of the Vuktyl gas field, no tests were conducted of the TKO-25/64 expansion-turbine unit in the bearing component of which the temperature compensator had been installed. However, there is every reason to consider that under these circumstances breakdowns of this type will be precluded.

The article indicates the status of the parts of 126212Yu radial-thrust bearings that broke down during operation of the TKO-25/64 expansion turbine units under various conditions, with an indication of the amounts of running time between overhauls, the causes of the breakdowns, and the design of the changed bearing component.

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ROTATING FREQUENCY OF PUMP-STATION TURBINE STABILIZED AUTOMATICALLY

Moscow GAZOVAYA PROMYSHLENNOST' in Russian No 9, Sep 80 p 46

[Article by Ye. I. Chubenko, V. D. Pyshkalo and V. A. Zhebko of Soyuzturbogaz [All-Union Association for Gas Turbines]: "A System for Automatic Stabilization of the Rotating Frequency of a Gas-Turbine Installation"]

[Text] Article on file.

In connection with the conversion of gas-turbine aviation engines to gaseous fuel when such turbines drive gas-delivery pumps, it becomes necessary to replace the automatic systems for stabilizing the rotating frequency of these engines. For this purpose, SKB Turbogaz [Special Design Bureau for Gas Turbines] has developed and fabricated such systems, based upon integrated microcircuits and adjusting valves for fuel feed with electromagnetic drives.

The system for automatic stabilization of rotating frequency includes, aside from the object of control (a gas-turbine engine equipped with a sensor for rotating frequency), an adjusting valve with electromagnetic drive, sensors of current in the coils of the electromagnet and the position of the gate of the valve, an amplifier for the power and the regulators of the current for the electromagnetic drive, the position of the gate, and the frequency of engine rotation.

The system was built by constructing multiple-circuit systems, and it is astatic of the first order with respect to control and perturbation.

If the regulators are adjusted in accordance with the formulas cited in the article, then transient states for control are achieved that have maximum overshoot (1.043 of the established value of the rotating frequency). The transient processes from the effect of the perturbation (throwing the load onto the object of regulation--the gas-turbine unit) display maximum dynamic change of rotating frequency.

Gas transfer-pumping units of 6,000 kw power have been equipped with the described systems, The indicated units have been installed at existing compressor stations and have been operating successfully for a number of years.

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11409
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FUELS

LACK OF BLOWOUT PREVENTERS AND INTRODUCTION OF NEW DRILL BITS DISCUSSED

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 30 Sep 80 p 2

[Article by Ye. Reshetnikov, inspector of the Municipal Peoples Control Committee: "Support for the Oil Workers"]

[Text] V. Dulya, chief of the Production-Preventive Maintenance and Equipment Supply Administration of Glavtyumenneftegaz [Tyumen' Main Administration of Oil and Gas], telephoned from Tyumen'.

"The Volgograd Production Association Barrikady is systematically interrupting the delivery of preventers. And how can the drillers work without them?"

What is true is true. If there is no blowout preventer on the drilling rig there is no way of covering the gusher bursting forth in case of an unexpected oil or gas show. This means that a serious accident is inevitable. It is no wonder that the inspectors of Gosgortekhnadzor [State Committee of the Council of Ministers for Supervision of Industrial Safety and for Mining Inspection] categorically prohibit the operation of drilling rigs not equipped with these mechanisms.

One thing would seem clear: to supply drilling machines and to have a lack of blowout preventers makes no sense. And this is the direct support of the oil workers of Western Siberia who are developing new fields under difficult conditions.

But here are some figures which Comrade Dulya reported. This year the Volgograd workers were supposed to ship 45 preventers to Tyumen'. The stocks were allocated so that these mechanisms would be received during the first quarter and at the beginning of the second quarter. The reason is understandable: They wanted to be able to deliver them to the drilling rigs before the winter snows melted.

However the Volgograd workers did not ship a single preventer during the first quarter. They then stirred themselves. They had shipped 38 preventers by August. But since the winter snows melted long ago the delayed equipment had to be sent to the fields by aircraft and by heavy helicopters. And this is expensive.

Why were the workers of the Barrikady Association incompetent? Is there a lack of capacities? Quite the contrary. Large, well-lighted buildings supplied with modern equipment were erected long ago on the northwestern edge of Volgograd to produce drilling equipment. A branch of the association, which exceeds the other plant in its dimensions, has been created here. What is interfering?

"There are not enough people,' the branch director Ye. A. Lomov spreads his hands. "And new equipment is dead you know, without personnel."

This saying is now coming into vogue. There is no one to work and everything is here. But are these complaints always justified? The head of the labor department of the Volgograd oblispolkom V. T. Bogatyrev provides an answer:

"This year the actual number of industrial production personnel at the Barrakady Association comprises 99.8 percent of the planned level. This is a higher indicator than the average for Volgograd."

Figures are an obstinate thing. They show better than words that Comrade Lomov is being too modest. Another fact also indicates this: the branch is coping with the sales plan. But how? It turns out that it is in more volume and more expensive.

One should give proper due: At the end of last year the association organized production of new BU-2500EU and BU-2500DGU drilling rigs. One can drill faster and to a greater depth when using them. They are also distinguished by the fact that they can be assembled more rapidly. The shipment schedule is being fulfilled. But supply of spare parts and assemblies is frequently interrupted. The concept here is a simple one: much is given to trivia while almost nothing is given to important matters. But it is really not understandable that a set of simple parts which do not cost one-thousandth of a drilling tool can "bring to life" several drilling rigs another time.

Comrade Dulya also reported that the Barrakady Association was supposed to send five gear boxes for the drilling rigs to the West Siberian oil workers during the second and third quarters. Not one has been received yet. There is also a shortfall of power units, swivels and crown blocks.

The same contrast is also difficult for the plant program as a whole. Only it is perhaps even rarer here. Thus, an additional 19 drilling rigs have been shipped to different parties since the beginning of the year. And this is of course not bad. But at the same time there is a lack of 43 blowout preventers.

"Measures are now being taken to correct the situation," confirms the acting chief of the production department of the association V. M. Kuritsyn. "A special shop to produce preventers has been organized. A schedule has been compiled, according to which manufacture of these mechanisms will soon be increased appreciably. We will try to make up the lag in the near future."

One would like to believe that this is not an empty statement.

6521
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IMPORTANCE OF GAS PIPELINE PROTECTION REEMPHASIZED

Moscow GAZOVAYA PROMYSHLENNOST' in Russian No 9, Sep 80 pp 25-26

[Article by V. I. Eristov and V. I. Trushkin (USSR Gosgaznadzor [State Committee for Inspection of the Gas Industry]): "The Protection of Gas Pipelines Is a Matter of State Importance"]

[Text] The Rules for the Protection of Trunk Pipelines were approved more than a year ago by Decree No 341 of the USSR Council of Ministers, dated 12 April 1979.

This decree charged USSR ministries and agencies and Union-republics councils of ministers with assuring that observance of the requirements of these rules by enterprises, institutions and organizations that perform work in the places where pipelines pass will be monitored.

A ukase of the USSR Supreme Soviet Presidium dated 10 May 1979 established that a warning or fine may be applied as an administrative punishment against persons guilty of violating the rules about the protection of trunk pipelines, if these actions do not by their nature involve criminal responsibility.

Officials can be subjected to a penalty of up to 50 rubles, ordinary citizens up to 30 rubles. Administrative punishment is used by administrative commissions under the executive committees of Soviets of peoples' deputies of rayons, cities and rayons within cities on the basis of reports prepared by fully empowered officials of enterprises and organizations that operate trunk pipelines.

The adoption of the All-Union documents indicated above and the necessity for all personnel engaged in the operation, construction and repair of trunk pipelines to study them were made known to the supervisors of the ministry's associations, enterprises and organizations (Circular Letter No 24/ts, dated 25 May 1979) and to the large number of readers of the journal (GAZOVAYA PROMYSHLENNOST', 1979, No 8, p 49).

However, as experience shows, not all association supervisors have taken a sufficiently serious attitude toward carrying out the Rules for the Protection of Trunk Pipelines.

Suffice it to say that in the period May-December 1979 nine cases of gas pipeline punctures by construction machinery, which led to a disruption of gas-transport operations, to a restructuring of the delivery of gas to customers, and to the execution of unplanned emergency restoration operations, were reported by local

USSR Gosgaznadzor organs (rayon gas inspection). The largest number of punctures of gas pipelines were recorded in Ukrgazprom [State Association of the Ukrainian Gas Industry], Kuban'morneftegazprom [Kuban' Offshore Oil and Gas Industry Association], Kavkaztransgaz [Caucasus Association for the Transport and Supply of Gas], Lentransgaz [Leningrad Association for the Transport and Supply of Gas], Volgogradtransgaz [Volgograd Association for the Transport and Supply of Gas], and Yakutgazprom [State Association of the Yakut Gas Industry].

Associations have been permitting outside organizations to erect various buildings and structures at places where gas pipelines pass without observance of the protective zones, and Volgogradtransgaz itself constructed permanent-type PMK-1 and PMK-2 buildings close to the terminal structures at Korobki.

The indicated cases demonstrate weak monitoring over the conduct of construction and installing work in gas-pipeline protected zones and in places where such lines pass, and also inadequate knowledge and use by association officials of the legal potential for stopping work that is being carried out in violation of USSR Gosstroy Construction Norms and Regulations and of the Rules for the Protection of Trunk Pipelines and for calling violators to administrative account in the established procedure.

The USSR Gosgaznadzor Administration has now, by way of developing the Rules for the Protection of Trunk Pipelines, worked out and coordinated with USSR Gosstroy and the Central Committee of the Trade Union of Oil and Gas-Industry Workers a Directive on the Execution of Construction Work in Protected Zones of Ministry of Gas Industry Trunk Pipelines VSN 51-1-80.

The Directive regulates the mutual relationships between clients (builders), regardless of the agency to which subordinated, and organizations and enterprises that operate trunk pipelines that belong to the Ministry of Gas Industry, particularly in the matter of the coordination, organization and execution of construction work in the protected zones of these pipelines.

In particular, the Directive states that enterprises, organizations and institutions and individual citizen-contractors (builders) should coordinate construction with the pipeline-operating enterprise (or organization) in accordance with paragraph 23 of the Rules for the Protection of Trunk Pipelines prior to the review by the appropriate organs of local soviets of people's deputies of the petition about the presentation of land sections for the erection of buildings and structures and the laying of utilities and service lines in an area where pipelines are located or within the limits of their protected zones.

Before starting construction work, clients (builders) are required to obtain the written authorization of the operating organization for the execution of work in the protected zone of the trunk pipeline. This authorization should indicate the place, the time of start and completion of the work, the organization that will do the work and the supervisor of the work, all the operating steps that are to be performed in the presence of a representative of the pipeline-operating organization, and the safety measures. Prior to the start of the work, the precise location of the pipeline should be established, and its operating condition and its position relative to the structures of the facility that has been designed (or is to be built) within the bounds of the whole work zone should be determined. The routes of the pipeline and the structures thereof should be identified by signs.

The Directive also sets the procedure for the conveyance of the assigned trunk pipeline route and its structures to a client (builder), the procedure for the execution of operations, the actions of construction personnel in case of damage to the pipeline or the observation of leaks from it of the product being transported, and so on.

Representatives of the operating organization and of State Gas Inspection have the right to suspend operations that are carried out in violation of the requirements of the Rules for the Protection of Trunk Pipelines or of the indicated Directive.

In this case, a statement (or report) is made up with an indication of the name of the organization doing the work, the position and family name of the supervisor of the work, the position and family name of the guilty person, and the place, time and nature of the violation. The report can be sent to an administrative commission of the local soviet of people's deputies for use in administrative measures against the guilty parties.

Directive VSN 51-1-80 took effect on 1 July 1980. Its efficacy depends greatly upon how thoroughly the basic rules of the directive are studied in associations, enterprises and organizations that operate trunk gas pipelines or which are doing construction or repair work in their protected zones.

The strict observance by supervisors, engineers and technicians of gas-transport subunits of the requirements of the Directive is a matter of state importance.

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11409
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FUELS

CASPIAN PLANT TO BUILD DEEPWATER OFFSHORE DRILLING PLATFORMS

Baku BAKINSKIY RABOCHIY in Russian 4 Oct 80 p 2

[Article by Yu. Aliyev, engineer: "The Giant on the Caspian Is Growing"]

> [Excerpts] The explorers of the earth's depths are going ever farther to sea in search of new deposits of "black gold." Ever greater depths are being subdued by their skills and their modern equipment. A new plant for building deepwater platforms, the start of construction of which BAKINSKIY RABOCHIY has already reported, will be called upon to augment this equipment.

Immediately beyond Shikhovskiy beach, toward Karadag, you are surrounded by industrial enterprises and construction sites. Last year a new billboard with an arrow appeared here, pointing out the way to the construction site of the plant for building deepwater platforms. It is even difficult to recognize the site. And no wonder--for the future enterprise has been sited on a land area of 200 hectares.

The plant has respectable "parents." The client is USSR Minmontazhspetsstroy [Ministry of Installation and Special Construction Work]. The design was developed by the Central Scientific-Research Institute for the Design of Steel Structure of USSR Gosstroy. The general contractors are USSR Minsel'stroy [Ministry of Rural Construction] and USSR Mintransstroy [Ministry of Transport Construction]. The budget-estimated cost of the enterprise is 335 million rubles, of which 182 million are for construction and installing work. Facilities costing that much have never before been erected in Azerbaijan.

A special trust was established in the republic to build the giant. It is very young (the date of birth is 1980) and it still has neither an assigned number nor its own designation, so in Minpromstroy [Ministry of Industrial Construction] papers it is known as the "site-trust."

The "site" is not bad at all--200 hectares! It is not so simple to find someone at such a "patch." However, we were brought to him: we got out of the vehicle and right away met the trust manager, A. Tagiyev. Well-proportioned, smart and young--he was well-matched to the trust. Only 8 years ago he finished the Azerbaijan Polytechnical Institute. He has experienced the whole thorny path of construction work: he has been a foreman, superintendent, and chief engineer of an administration, and right now he is supervising the largest construction project in Azerbaijan. We set out on the trip with him. The first stop was at the main building.

"But the name 'building' is arbitrary," says Akhmed Akhmedovich. "Actually, this is a group of departments: for the fabrication of pipe, components and support structure and of an open-top crane platform."

Far off in the distance the skeletons of other large buildings that were being erected were visible--blocks of auxiliary departments, a three-story dining hall for 630....The construction project parameters are impressive in scale: 1 million m^3 of inert materials are to be brought in for fill. A self-propelled crawler crane with a load capacity of 450 tons will operate at the site!

...When the colossal metal structure for the deepwater platform is ready, it will be transported to Astrakhan' for completion of the superstructure portion. Aside from the drilling derrick, which is intended for penetrating several directional holes, production areas, hotel-type rooms for drillers and servicing personnel, a dining room, a bath, showers, and a cinema will be located on the deck. For almost 250 people will work and live on each such platform.

Only after this will the floating island be sent to the place of "residence." A dump-type barge will bring it to the work site, where, under the force of gravity, the "feet" structure of the island will go deep into the bottom. The feet will be tightly fastened there: from inside, piles will be driven and concreted.

On the water there, afloat facilities are scurrying about, and close to the edge of the shore a suction dredge, its hull quivering, is working. The bottom deepeners also are participants in the construction. The plant for deepwater platforms will have its own port, where breakwaters that shut off the water area, moles and mooring structures are to be erected. Azerbaijantransstroy [Azerbaijan Transport Construction Trust], the second general contractor at the site, is charged with all this work. From the first days, the marine general contractors have undertaken a rapid work pace and are building it up each day.

The plant for deepwater platforms that is under construction, where several thousand people are to labor, will be one of the most perfected of enterprises and will be equipped with most progressive equipment and technology. It is planned that even such labor-intensive operations as rigging work will be mechanized, and only a fourth of the welding operations (for erection of the platform) will be done manually. The fabrication of pipe--from small-diameter to 6-meter pipe--lies on the shoulders of mechanisms and automatic devices.

There is still another curious feature about the enterprise--its autonomy, the large number of in-house production facilities, even departments for generating oxygen and carbon dioxide and for fabricating electrodes.

The designers took care to create maximum comfort for the plant's workers. All the basic departments will have independent dining rooms or food-serving units, in-house amenities, recreation areas and athletic fields. Moreover, the plant will have its country facility and recreation area at Khudat.

It is characteristic that such a colossal and complicated activity will not contaminate either the sea or the air. High-capacity structures will clean not only the effluent of its production work but also the water of the Karadag Cement Plant and the settlement of Primorsk.

Incidentally, about Primorsk. Its face will be changed beyond recognition in a couple of years: it is planned to build 165,000 m^2 of housing for the builders and operators of the future enterprise. This is much more than the whole settlement's existing housing.

Bakgiprogor [State Institute for the Design of Housing and Public Structures and for Layout of the City of Baku] is already working out drawings for Primorsk's housing tracts. Blocks of new housing are to be erected in high-rise buildings of 9-14 stories. Along with apartment houses made of large panels, it has been decided to build a row of spot buildings under individual designs. In the center of each housing tract will be facilities for cultural and personal services and recreation centers. Primorsk will be developed along Karadag Shosse, in the direction of the plant, and with time they will comprise almost a single entity.

Although the plant for deepwater platforms is in the construction-start stage, there is no time left for vacillation, for picking up speed there. For, according to the plan, it should go into operation in 1983! How do matters stand at the plant today? How are the builders coping with the strenuous work program? The "site-trust" carried out the plan for the first 8 months of this year by 78 percent (45 percent with in-house forces), Azerbaijantransstroy did so by 125 percent.

Of course, the "dry-land" and "marine" general contractors have different tasks and different amounts of work, but why such a gap in carrying out tasks?

A. Tagiyev, manager of the "site-trust": "Trust No 1 of Minpromstroy worked here first. It left us much uncompleted work. The construction site is in need of an additional work force, especially of qualified specialists for concrete, reinforcement and electrical-welding work. There are not enough motor vehicles for transporting people to the place of work. Public eating is poorly organized...."

A. Tsapkin, chief engineer of Azerbaijantransstroy: "As soon as we were charged with creating the new plant, the trust at once created for this purpose a new subunit--the 37th Floating Construction and Installing Detachment--and saw to it that a base and all the necessary prerequisites for the work were organized. Resources were concentrated at the site. True, we still have some unresolved problems, but they are being overcome gradually. We are expecting the arrival of a second suction dredge in the near future. This will help to maintain the work pace that has been adopted."

...The giant on the Caspian each day is gathering strength and taking on new outlines. Great attention on the part of the supervisors of departments for shopping, personal and municipal services, communications and motor-vehicle transport is now required. Worker manning is constantly being increased. It is necessary right now, in good time, to undertake the creation here of a shopping network, places for everyday personal services, and telephone communications,

The main thing--direct automotive ties with the republic's capital are very necessary. At first it was possible to get the buses that ply the route from Azneft' to Primorsk to make a little turnoff from the main route in order to deliver passengers directly to the construction-project site.

In brief, there are many problems. They undoubtedly will be solved. But this must be done more rapidly.

11409
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FUELS

TRACTOR FUEL-EQUIPMENT REPAIR, FUEL STORAGE FAULTY AT SOVKHOZES

Leningrad LENINGRADSKAYA PRAVDA in Russian 18 Oct 80 p 2

[Article by Yu. Sviridov, director of the Central Scientific-Research Institute for Fuel Equipment and doctor of engineering sciences: "How to Save Millions"]

[Text] Our country has done very much to provide the countryside with highly productive and reliable machinery. Then why, in that case, does a shortage of it occur periodically? Comrade L. I. Brezhnev has said that "scientific and technical progress in agriculture cannot be reduced down just to increase in shipments of new machinery, chemical fertilizers and other resources for production. An integral part of this process consists in the skillful use of land and fertilizers, and each machine and each ruble invested in production, using them effectively and with the greatest yield."

Technical progress in machinebuilding today is so intense that servicing and repair of the more precisely made components are becoming increasingly complex matters. Especially when speaking about fuel apparatus, which, as is known, is the heart of an engine.

Our institute is the country's head institute for the development of this sort of equipment, and, therefore, it bears full responsibility for its technical level. However things may go with the solution of particular problems, we have succeeded as a whole in recent years in raising sharply the technical level of our products and in increasing severalfold their reliability and longevity. But is this being realized in full measure in practice?

In order to answer this question, and that means to a great extent also the question of the use of agricultural equipment in general, the institute has done much work in recent years, jointly with the industry's factories, to study the conditions of operation of fuel apparatus on farms of Leningrad Oblast, the Baltic republics and certain other Union republics.

We began with the fuel. Even the first samples taken from the tanks of tractors at various farms of the country indicated that more often than not it was practically unsuitable for use. In Leningrad oblast, for example, we found that 92 percent of the tractors' tanks contained fuel with an impermissible amount of mechanical impurities, organic pollutants and water. When it is considered that diesel fuel equipment is manufactured with a precision down to fractions of a micron, then dirt falling into the fuel will be injurious. Pumps and injectors operate reliably for

6,000 to 8,000 engine hours on clean fuel but little more than half as long on contaminated fuel.

In order to find the cause of the fuel contamination, we took, jointly with oil-refining specialists, several thousand samples of fuel from various oil refineries of the country. The result? Eighty percent of the refineries were shipping contaminated fuel because it was being washed out poorly. The Baku and Central Asia refineries produced especially poor-quality product. I will not conceal the fact that much effort had to be applied to introduce a fuel-purity indicator into the GOST [State All-Union Standard]. Finally, Minneftekhim [Ministry of Petroleum Refining and Petrochemical Industry] recognized that our requirements were legitimate and quickly reconstructed its industrial cleaning processes. Now, almost 90 percent of the industry's enterprises are producing quality-standardized fuel.

The restructuring had a favorable effect on the efficiency of fuel equipment, but the problem was not solved completely. And here is why. We examined several hundred rayon and sovkhoz fuel storage facilities and observed that they were completely unsuitable. Thus, at Leningrad sovkhozes these storages did not, as a rule, meet the technical requirements: the tanks are not cleaned for years and a so-called "sediment" of contaminated fuel forms in them, the removal of which is almost impossible. The system for filling and filtration at such storage facilities is primitive, and prevention of the condensation of atmospheric moisture is not guaranteed. But this is in equipped storage facilities. And it is true also in storage facilities in the field.

Our institute's collective came out with an initiative to develop a standard design for the reconstruction of fuel-storage facilities and to implement it for test verification at Leningrad Oblast sovkhozes. Right now, at the Sudakovo Sovkhoz, in Priozerskiy Rayon, such a storage facility is already in operation. Since it has been in operation, not one case of the servicing of tractors with quality-nonstandardized fuel has occurred. As a result, with competent technical servicing, expenditures for fuel equipment at this farm have been reduced severalfold.

Even the slight experience in the creation and operation of the new system for fuel supply has shown the high effectiveness of this solution. Losses of fuel have been cut, idle tractor time has decreased greatly, requirements for tractor repair have been lessened, and engine life between overhauls has been lengthened. There can be no comparison at all of the advantages of this system with the expenditures for reequipping the storage facility.

This work was, to a great extent, a matter of initiative. I cannot give enough credit to many institute specialists, who, sparing neither effort nor time, carried out this very important and necessary affair. Primarily, I would name scientific co-workers Ye. I. Bezdol'naya and R. M. Mokhov, as well as engineers M. A. Bunin, A. V. Pusyrev and V. B. Soltitskiy, who made the main effort to implement our plans to struggle for fuel savings.

We encountered, unfortunately, not only the problem of fuel. For example, the enormous volume of procurement of spare parts for repair struck the eye. Wishing to clarify the reasons for this phenomenon, we investigated Sel'khoztekhnika repair enterprises.

We observed the following: if a fuel pump must be repaired, it is disassembled and all its main parts and components are changed. Because of the lack of diagnostic equipment and modern test stands, which would enable the conditions of parts and components to be assessed, they proceed simply to replace everything in order to be sure. Which is simpler, since the Sel'khoztekhnikas cover all orders for the shipment of spare parts for fuel equipment. As a result, repair costs are increased, and an enormous quantity of good parts is thrown away.

Here are the figures that we obtained as a result of numerous inquiries at various repair enterprises of the country, including Leningrad Oblast. A fourth of the parts actually require replacement, a fourth can still have some service life, and the remaining 50 percent of the parts are in new condition.

According to the calculations of economists, about 100 million rubles' worth of realizable assets are lost annually, and highly skilled labor is spent for no good reason. It must be recognized for the sake of justice that Sel'khoztekhnika repair enterprises try at times to return certain parts to use, but the parts, which are reclaimed in cottage-industry fashion, do not enjoy demand because of their low quality.

What is to be done? The Vil'nyus Fuel Equipment Plant has for 14 years now been producing fuel pumps under a basically new design prepared by our institute. The nontraditional scheme of the pump does not allow repair to be organized locally. After creating a repair branch and exchange centers, the plant, with our help, arranged for factory repair and the simultaneous reclamation of parts. This experience indicated that the repaired pumps have a service life equal to that of a new pump. Almost 90 percent of the parts that formerly were thrown away are reclaimed under this repair. More briefly, 10 percent of the broken-down parts are not used. The operating costs for industrialized-type repair is low, the quality is high and metal savings are great, but the total expenditure for spare parts, while fully satisfying the requirement, is only about two-fifths as much. And this method is being used by the plant: instead of lengthy repair, the system of exchanging old pumps for new is in operation.

Thus, there is a basis for supposing that the creation of repair facilities whose overall productivity is equal to about 15 percent of the capacity of the main facilities will practically solve the repair problem in the country. According to the specialists' calculations, it will enable 50 million rubles' worth of production capacity to be released nationwide.

The results of our analysis give reason to assert that no few reserves for raising the productivity of tractors and other agricultural equipment are to be found also in the organization of factory technical servicing of fuel equipment. Such servicing is necessary in order to provide for reliability of engine operation during the busy field season, and also for maintaining engines in good condition by means of timely, as the operators say, readjustments.

If it is figured out how we did this, then such an organization of affairs will enable the state to save hundreds of thousands of tons of fuel, greatly reduce the costs of equipment upkeep, and greatly extend the period of its operation. But anyhow, it is impossible to provide such technical servicing locally because of a lack of the necessary monitoring apparatus and proper qualification of the line personnel. What is to be done in such a case?

With the amalgamation of sovkhozes in Priozerskiy Rayon, our institute then concluded a contract for collaboration, within the framework of which we are engaged in reequipping fuel storage facilities, in repairing fuel equipment, and also, I emphasize especially, in technical servicing of it. When definite experience had been accumulated and all the possibilities had been weighed, we decided to come out with an initiative for broad and systematic assistance to the agricultural production facilities of the whole of Leningrad Oblast with respect to the operation and upkeep of fuel apparatus. I will say right off that this initiative received support on the part of the Leningrad Oblast party committee and right now we are developing a detailed program of assistance to the countryside for the Eleventh Five-Year Plan. There is as yet no final version of this program, but it is possible to talk about its components.

The institute's collective took upon itself a commitment to execute during the Eleventh Five-Year Plan technical supervision over the reequipping of 150 sovkhozes with fuel storage facilities. This is a big job, but, as has been said already, we have already acquired some experience for it that has yielded good results.

Second, we in the ministry have already agreed specifically with the Vil'nyus plant that they will provide factory repair for all types of fuel equipment that our oblast's sovkhozes need. Organizationally, this can be accomplished if, for example, the Siverskiy Repair Plant of Sel'khoztekhnika can be used as a local exchange center. And, finally, our institute's specialists are ready to take upon themselves responsibility for the technical servicing of fuel equipment.

Later, we will pose, perhaps, a task that is too bold but is extremely necessary--to reach the point where not even 10 percent of the parts will be thrown away, which is the case right now with factory repair of fuel apparatus.

These days, when the institute is toiling to fulfill the additional socialist commitments that the collective undertook for the 26th CPSU Congress, a further comprehensive refinement of our plans is going on, so that our help to the countryside's workers will, from the first days of the new five-year plan, become still more effective and meaningful.

11409
CSO: 1822

FUELS

COAL MINING BY HUGE WALKING EXCAVATOR AT NAZAROVO DESCRIBED

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 24 Sep 80 p 1

[Article by S. Chetverikov, manager of the Industrial Transport Section of the CPSU City Committee (Nazarovo, Krasnoyarskiy Kray): "The Giant's Step"]

> [Text] The precongress competition has been born. Two hundred million tons of coal have been mined at the Nazarovo Strip Mine since the beginning of operations. During the Tenth Five-Year Plan alone more than 61 million tons have been shipped to customers. Creative collaboration with the Uralmash [Urals Heavy Machinebuilding Plant imeni Sergo Ordzhonikidze] collective will help to raise the coal miners' work pace.

Our trip is to the place where one of the world's largest walking excavators, the ESh-100/100, is doing stripping work. On the way we now and then meet dump trucks with black soil. Before starting the stripping work, the coal miners remove the upper fertile layer with precision, and hundreds of small birch trees from here are transplanted in parks and on the city's streets. And the strip mine is increasingly expanding its borders--its sides are moving apart by 150-200 meters per year.

And here is the ESh-100/100, this five-story metal house, which even in the distance astonishes one with its size. Its 100-m^3 bucket takes soil and puts it to one side, and we feel the earth shaking under our feet, for enough soil is spilled out from the bucket at one time to fill three railroad cars. Other walking excavators, which follow after the giant at a respectful distance, doing auxiliary work, seem like playthings in comparison with this giant.

"Since the first of the month the excavator has moved 1.3 million m^3 of soil," says operator N. Volod'kov. "With time, it seems to me, it will be possible to bring its productivity even up to 2 million m^3 per month."

Nikolay Zakharovich's words must be heeded. He started at the Nazarovo Strip Mine in the first year of operation, 27 years ago. He drove an ESh-1 walking excavator whose bucket capacity was about 3.75 m^3. There was no cab at all for the operator, who sat directly in the excavator's body.

It is another time, different equipment and other requirements on people and on managers. Previously, even an excessive smoke break during excavation did not have much effect, but now an hour of idle ESh-100/100 time is 5,000 rubles tossed to the wind. In brief, expensive machinery must be worked at full strength.

The creative collaboration of Uralmash and Krasnoyarskugol' [Krasnoyarskiy Kray Coal-Mining Association] is pursuing this goal. Having undertaken a shock-work period in honor of the 26th CPSU Congress, the machinebuilders and coal miners have adopted joint socialist commitments. The Sverdlovskites have committed themselves to executing designers' surveillance with high quality and to extending the necessary engineering assistance, and the coal miners of the Nazarovo Strip Mine have resolved to support effective work by the excavator: to do 1 million m^3 of stripping above the plan this year.

The ESh-100/100 that is working at the Nazarovo Strip Mine is the prototype of these excavators. It is impossible to say that the first pancake was received in perfect shape, but, as with any mechanism produced nonserially, it requires perfecting. For example, a basically new walking system was called for in this giant. At first it was this that proved to be one of the bottle necks. Only by the joint efforts of the coal miners and the machinebuilders did the excavator learn to walk. It was the same with the traction cables, which were improved in the process of erecting the excavator.

But the coal miners have accepted the ESh-100/100 for operation, and the machinebuilders tirelessly watch over its operation, as usual. And it is not only they. Representatives of Leningrad's Elektrosila monitor the functioning of the specially made generators and electric motors. There are also scientists here from the Moscow Mining Institute. Their job is to develop methods for planning and financing the production volume for this machine. Creation of the new excavator has not only brought coal miners, machinebuilders and economists into the future but it has also compelled scientist-theoreticians to do some thinking. For questions of the stability, mobility and vibration for such gigantic machinery still have not been resolved in earnest.

"The rate that is based on the new equipment is one of the components of our successful operation. And last year's results were recognized by award of the Challenge Red Banner of the CPSU Central Committee, the USSR Council of Ministers, the AUCCTU and the Komsomol Central Committee," says Nazarovo Strip Mine director D. Abramov. "Back during the last five-year plan we replaced all the power shovels and converted to rotary excavators for mining coal. There was not a year that our engineers and technicians did not put forth some kind of innovation in work organization. All this has enabled the strip-mine collective to mine coal above the introduced capacity. During the current five-year plan we exceeded the strip mine's capacity by 4 million tons of coal."

The best of the Nazarovo Strip Mine's experience will migrate to the Achinsk section, which is being built not far away. It will have both completely direct dumping and rotary excavators with pile-formers. And farther to the south a strip mine of still higher capacity--the Berezovskiy--is being established.

11409
CSO: 1822

FUELS

BRIEFS

IVANOVO POWER-PLANT RECONSTRUCTION--Ivanovo. Reconstruction of the Ivanovskaya GRES, one of the first 10 Soviet electric-power stations built under Lenin's GOELRO [State Commission for the Electrification of Russia] plan, has started. The station, which was started up 50 years ago, operated for a long time on local peat, and in recent years on coal. The purpose of reconstruction is to supply the station with three gas turbines. The GRES will start peak mode operation in order to cover the maximum load during the morning and evening hours. The station's capacity will exceed 350,000 kw. [Text] [Moscow IZVESTIYA in Russian 14 Oct 80 p 2] 11409

PERM' POWER-STATION RECONSTRUCTION--Perm'. Construction of the Permskaya Thermal Electric-Power Station is being promoted. A site on the shore of the Kama Reservoir close to the rayon center of Dobryanka was chosen for the energy giant. The design contemplated that in 1983 the station's first power unit, of 800,000 kw capacity, will be introduced and all six units will have been installed at the GRES. A 500,000-volt power-transmission line will connect the new power center with the Urals Electric-Power System. Right now the footing for the first power unit is being laid, a production base is being built, and forest clearings are being broken through, along which openwork masts will step off in the direction of Perm', Bereznikov and Solikamsk. [Text] [Moscow IZVESTIYA in Russian 17 Oct 80 p 3] 11409

URAL-VOLGA OILFIELD WORK--Gur'yevskaya Oblast. In February 1968 the first trainload of crude oil from Martyshi--the firstling of the group of fields of the Ural-Volga interfluvial area--was sent from the loading platform to the country's refineries. Since then the oil-recovery workers of the area between the rivers have attained no few labor achievements. Right now the Zhaikneft' [Zhaik State Oil-Industry Association] is developing five underground stores: the Martyshi, the Kamyshitovoye, the Gran, the Zhanatalap and the Rovnoye, which are located in Novobogatinskiy Rayon of Gur'yevskaya Oblast. More than 43 percent of the liquid fuel recovered by the Embaneft' [Emba Oil-Industry Association] has been taken from the ground here. In 4 years the collective has mastered and put into operation the Vostochnyy Zhanatalap and Rovnoye fields, and 83 million rubles' worth of product have been sold. The task for raising labor productivity has been met. One hundred and thirty wells have been put into operation, versus a planned 65. The newest achievements of science and technology are being applied in the work practice of the oilfield administration. We have made wide use of recovery intensification measures: simultaneous and separate operation of two horizons at one well, maintenance of formation pressure, and thermal treatment of the bottom-hole area. Methods of dealing with paraffin both in pump and compressor pipes and in discharge lines by the use of special assemblies and reactants have been further developed. The Zhaikneft' NGDU [Oil and Gas Recovery Administration] should, during the concluding year of the five-year plan, produce a large amount of oil and put more than 40 wells into operation. It is estimated that the execution of 208 geological and technical measures will enable more than 152,000 tons of additional raw material to be recovered. So the injection of water into the Zhanatalap and Rovnoye fields must begin. This operation will require new capacity for maintaining formation pressure, which will permit recovery to stabilize and the period of oil withdrawal to be extended. The water-injection method of maintaining formation pressure has special significance for us. Sixty-five percent of the hypothetical reserves of oil have been withdrawn from the Martyshi stores in a short time with its use. The NGPU collective is striving to greet the anniversary of adoption of the new USSR Constitution in proper fashion. A thousand tons of above-plan oil is to be recovered by that glorious date. [Excerpts] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 13 Sep 80 p 2] 11409

KUBAN' RIVER PIPELINE CROSSING--Not far from the town of Cherkesska, the shores of the Kuban' River have been connected by an unusual bridge, an openwork arch that extends for several hundred meters, It has opened the road for natural gas to the Yuzhnyy hothouses, Europe's largest hothouse combine. [Text] [Moscow IZVESTIYA in Russian 14 Oct 80 p 3] 11409

NAVOI POWER STATION--The eleventh power unit in a row of the Navoiskaya GRES has been put into operation ahead of schedule. Its capacity is 210,000 kw. Later, another--the 12th unit--will be built. As a result, the station will become one of the most high powered in Uzbekistan. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 39, Sep 80 p 2] 11409

PERM' POWER UNIT--The first unit of the Permskaya GRES, of 800,000 kw capacity, should yield current in 1983. The GRES's total capacity will be 4.8 million kw. [Excerpt] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 1 Oct 80 p 1] 11409

DOWNHOLE EQUIPMENT--Volgogradskaya Oblast. The Korobkovskiy Test Plant of the All-Union Scientific-Research Institute for Drilling Equipment has mastered the output of a hydraulic percussion mechanism that was designed to free drill strings that have become stuck as the result of a cave-in. Tens of accidents at the Nizhnevolzhskneft', Ukrgazprom, Ukrneft' and Grozneft' associations have been eliminated by means of the "striker." It also was used during penetration of the superdeep Kola hole. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 1 Oct 80 p 2] 11409

SAYANO-SHUSHENSKAYA GES READINESS--The builders of the Sayano-Shushenskaya GES will introduce into operation ahead of schedule this year the fourth and fifth water-power units of 640,000-kw capacity each. This will be a labor gift to the 26th CPSU Congress by the collectives that are erecting the Sayany giant. The country's largest GES is being built and it is operating. From the moment of startup of the first power unit its hydroelectric generators have produced more than 3 billion kw-hr of electricity. A precise labor rhythm reigns at Sayany. All attention has been riveted on facilities that are due for early startup. The fourth water-power unit has been named "Komsomol'skiy." At the initiative of the young builders, it is planned to start it up on the Leninist Komsomol's birthday--29 October. The assembled 150-ton stator of the generator has been installed at the fifth unit. This operation was performed here for the first time. [Excerpt] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 27 Sep 80 p 1] 11409

NEW LENINGRAD-PRODUCED GENERATOR--Leningrad. A turbogenerator whose production at Leningrad's Elektrosila association has been arranged opens up a new series of equipment for nuclear power. Although its manufacturer's certification indicates a power of 1 million kw, the unit can support a much heavier load, yielding another 100,000 kw above nominal power. The potential of the turbogenerator, which has been awarded the State Emblem of Quality, has been confirmed by bench tests. During these tests the machine's behavior during many modes of operation indicated results higher than those calculated. The unit possesses a double reserve for resistance to heat and vibration and a better efficiency factor. Its service life is 30 years, that is, 5 more than that of the equipment of preceding models. The first turbogenerator with the honorary pentagon will be shipped to the Yuzhno-Ukrainskaya AES. Manufacture of a unit for the Kalininskaya AES has begun ahead of time. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 21 Sep 70 p 2] 11409

NEW PUMPED-STORAGE PLANT--Lodeynoye Pole. Scientists have long thought about creating a "pulsing" electric-power station that can cover so-called peak loads, when power consumption rises considerably. Our country has such an experimental station--the Kievskaya. Still another, a huge one--the Zagorskaya, is being built. They are called pumped-storage stations (GAES's). A third also will appear: USSR Gosplan has approved and USSR Ministry of Power and Electrification has confirmed the feasibility study for the construction of this GAES, which was developed by Gidroproyekt [All-Union Design, Surveying and Scientific-Research Institute] imeni S. A. Zhuk. "Capacity will be 1.360 million kw," reported deputy chief engineer of the institute A. Vasil'yev. "The dam will rise several tens of meters high on the Shapsha River, in Lodeynopol'skiy Rayon of Leningrad Oblast. It is planned to install eight units at the station. At night, when energy consumption is sharply reduced, the pumps will transfer water from the tailrace to the head race, and, when the demand for electricity rises, it will be directed along a penstock to the turbines." The surveyors are already working at the construction site, preparing baseline data for designing the GAES. [Text] [Moscow NEDEL'YA in Russian No 33, 11-17 Aug 80 p 4] 11409

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